ing 24,1% of whole fresh body mass (range = 21,9–27,5%, s.d. = 5,4%).

Our observations confirm those of Lepage and Darlington,[8] that *C. vidua* queens do not carry workers to new nests to assist with colony foundation. Even shortly after take-off from the parent nest, there were few if any workers on the queens (Table 1). Our observations differed from those of Lepage and Darlington in two respects. Firstly, they observed *C. vidua* alate queens in Kenya dispersing from nests for only short distances at little over a metre above the ground, whereas we observed them flying considerable ditances, high above the ground (>15 m). The reasons for this contrast in dispersal behaviour are not clear, but may be related to differences in the structure of the vegetation or the density of termite mounds at the two sites. Secondly, none of the queens observed in Zululand dug into termite mounds when founding a colony, unlike the Kenyan individuals. Although termite mounds were uncommon at the site where we observed *C. vidua*, termites were common underground and their presence could conceivably have influenced where a queen dug. However, we obtained no evidence that termites did influence the site of colony foundation.

It is remarkable how an attractive hypothesis can be transformed into an accepted fact. Arnold[4] in 1916 was the first to speculate on colony foundation in *C. vidua* and described it in the following way:

> It is probable that the dense tufts of hairs on the tarsi of the female serve an important purpose—that of enabling some of the minute workers to attach themselves to the body of the female when the latter is about to leave the parent nest. Several specimens of the female have been taken by me with one or more workers biting on to the tarsal fimbriae. I am inclined to suspect that the young queen cannot start a new nest without the help of one or more of the workers from the old nest, on account of the size of her mouth-parts, which would probably be too large and clumsy to tend the tiny larvae of her first brood, and that it is therefore essential that she should have with her some workers which are able to feed the larvae by conveying to them the nourishment taken from the mouth of the queen.

Wheeler,[3] in a paper published in 1936 on the relationship of ants to termites, agreed with the ideas presented by Arnold and in addition presented a drawing of a museum specimen of a winged queen of *C. vidua* with two workers attached to her tarsi. This queen was probably collected while emerging from her natal nest, before the workers were shaken off. Wheeler states categorically, with no supporting proof, that 'the rearing of the minute larvae after hatching from the eggs . . . cannot be carried on by the same method of oral regurgitation as that employed by other colony-founding ants in which the difference in size between the female and her first brood of offspring is less excessive'. He disagreed with Arnold that the workers transported to the new nest are able to feed the larvae from substances regurgitated by the queen, because 'there is no reason to assume that the colony-founding queen leaves the parental nest with a supply of liquid food in her crop'. Instead, he proposed that the transported workers preyed on termites in the vicinity or utilized as food some of the eggs produced by the queen. The results of the present study show that in fact the queen leaves the nest with a considerable quantity of liquid in her crop.

It was Wheeler's article that provided the source for the perpetuation of this mistaken idea of colony foundation in *C. vidua*. Wilson[5] in 1971, in his influential book on social insects, reproduced Wheeler's drawing of the queen with attached workers. Although Wilson does not state categorically that the workers assist the queen in founding a colony, Arnold's original idea is presented in a convincing manner, as follows:

> . . . The workers of *Carebara* are so much smaller [than the queen] that some catch a ride with each queen on her nuptial flight. The queen enters a termite nest after the nuptial flight and is presumably assisted by her little sisters in the rearing of the first brood.

Brian[6] brings the myth of colony foundation in *C. vidua* to fulfilment by stating that '*Carebara* queens . . . have such small workers that they can cling to their legs during nuptial flights and be ready to help (Wheeler, 1936), thus cutting out much risk and time'. Both Wilson and Brian appear to have been unaware of the findings and remarks of Lowe,[7] which were published in 1948, well before the books of these two authors appeared. Ettershank,[9] however, was aware of Lowe's paper and relegated Wheeler's popularization of colony foundation in *Carebara* to its rightful place as speculation.

It is surprising that the myth of colony foundation in *Carebara* developed at all as it does not make sense that there would be selection for the production of large, costly queens that are totally dependent on one or two tiny vulnerable workers clinging to them when they leave the nest. These workers would have to survive the nuptial flight, the digging of the hole by the queen, and the period between egg laying and the production of the first brood.

In myrmicine ants, reproductives leaving the nest are usually surrounded by workers (H. Robertson, personal observations), presumably to protect them from predators. In the process, workers frequently walk over the reproductives and even bite them. In *C. vidua*, because of the extreme size dimorphism between workers and reproductives, it is inevitable that during the release of alates, queens (and males) sometimes take off with workers still on them, but this apparently has no adaptive significance.

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HAMISH G. ROBERTSON* and MARTIN H. VILLET

Department of Zoology,
University of the Witwatersrand,
P.O. Wits, 2050 South Africa.

*Present address: South African Museum, P.O. Box 61, Cape Town, 8000.

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